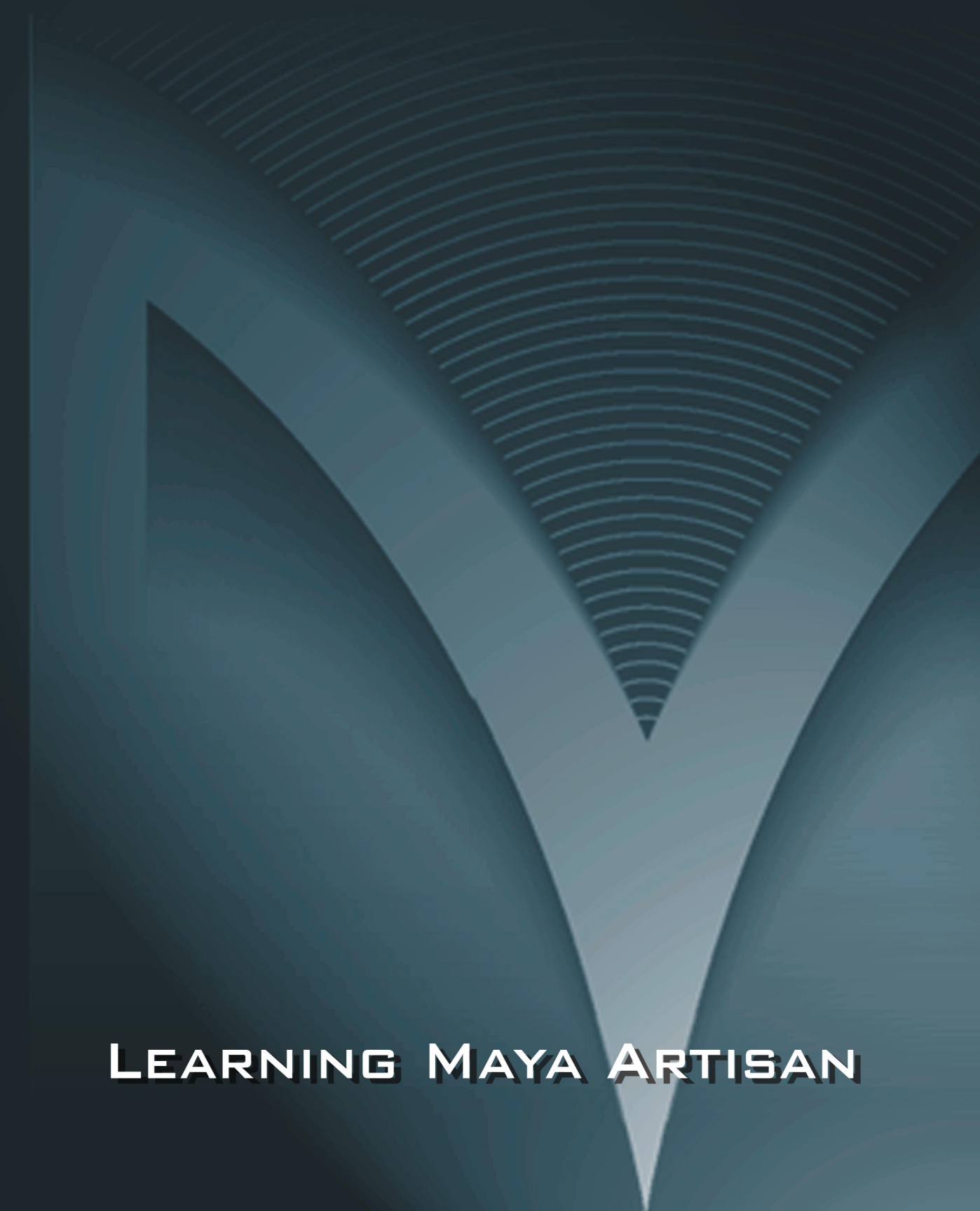
Learning Maya Artisan

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Learning Maya Artisan

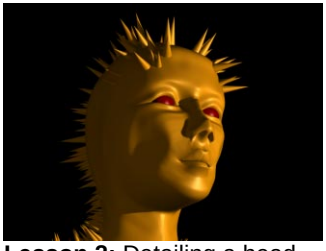
Maya Artisan is an add-on module to Maya 1.0 that uses an intuitive *paint and sculpt* interface to let you work more interactively with Maya.

The Artisan *brush-based* interface offers a more artistic approach to certain modeling and animation tasks in Maya. Workflows such as pushing and pulling CVs or setting weights on a cluster are enhanced by Artisan's ability to use brush strokes. In this way, you can add realistic details to a surface or soften the effect of a cluster deformer.

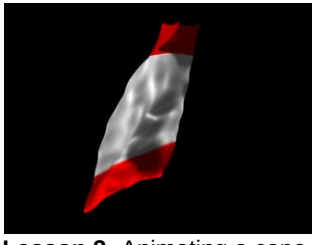
As you work through this book, you will quickly see how Artisan speeds up these kinds of workflows while giving you artistic control over the results.

This book contains three quick lessons that take you through the Artisan functionality. The lessons can be used to familiarize yourself with how Artisan works and where the various Artisan tools are located.

Lesson 1: Sculpting a mask



Lesson 2: Detailing a head



Lesson 3: Animating a cape

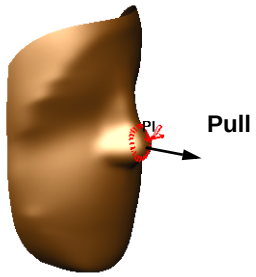
INTRODUCTION

The Maya Artisan tools

Maya Artisan includes four tools that each add different levels of functionality to Maya. All of these tools will be explored in the Learning Maya Artisan lessons.

Sculpt Surfaces tool

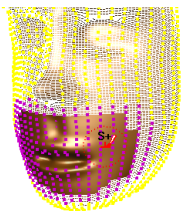
The *Sculpt Surfaces tool* lets you push and pull CVs to sculpt a NURBS surface. This tool also lets you smooth and erase your brush strokes for added interactivity.



Sculpting a surface

Paint Select CVs tool

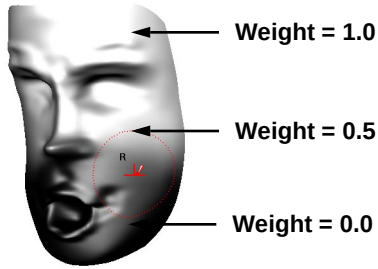
The *Paint Select CVs tool* lets you select CVs on a NURBS surface. You can then use the selected CVs within Maya or you can use them as a mask for sculpting with Artisan.



Selecting CVs

Paint Weights tool

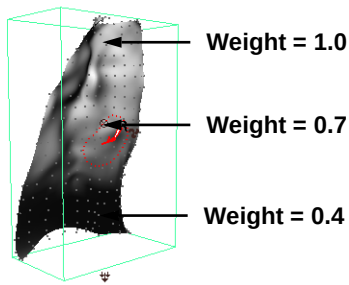
The *Paint Weights tool* lets you vary the CV weights over the cluster using brush strokes. Artisan also gives you feedback by displaying a grayscale map on the surface to show you where different weights have been applied.



Painted cluster weights

Script Paint tool

The *Script Paint tool* lets you add new functionality to Artisan using MEL (Maya Embedded Language) scripts. In this book, you will work with the *geometryPaint* script which lets you paint geometry over a surface and the *softBodyPaint* script which lets you paint goal weights on a soft body.

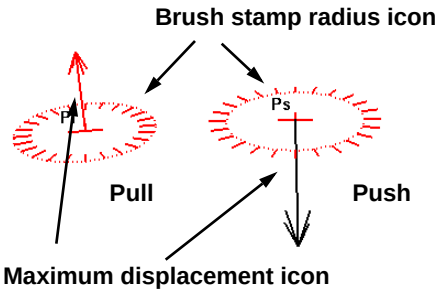


Animated soft body with painted goal weights

The Artisan settings

When you are working with Artisan, you will learn to use its brush-based interface. This means that whether you are selecting CVs or sculpting a surface, you are directly manipulating the surface. This makes it easier to evaluate the impact of your edits.

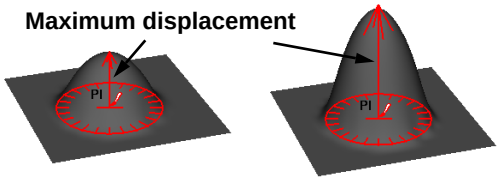
The tools in Artisan have different options that are found in the Tool Settings window. Some of these settings are visually displayed as part of the cursor icon that appears as you paint on the surface. The icon shown below uses icons to indicate the brush radius and the maximum displacement. The icon also clearly labels the tool operation as either push or pull.



Typical cursor icons

Maximum displacement

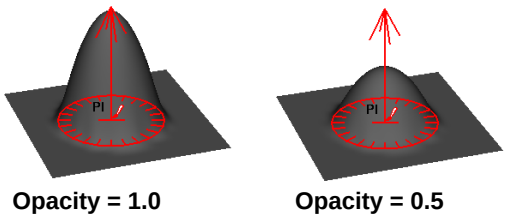
When you are sculpting with Artisan, you can set the *maximum displacement* value. This value determines how much the surface will displace with a single brush stroke.



Different displacement values

Opacity

If you would like to build up your brush strokes, you can set the *opacity* of the stroke so that only part of the maximum displacement is used.

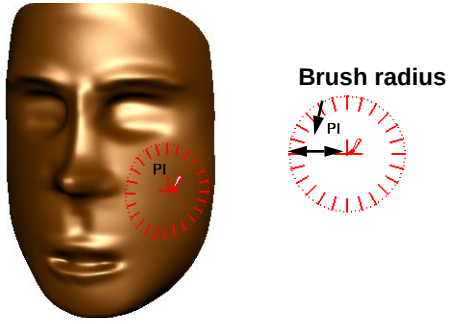


Opacity settings

Tip: As you work through the lessons, you will learn that it is best to use low maximum displacement and opacity settings so that you can build up your brush strokes gradually.

The brush stamp radius

The *brush stamp radius* determines how much of the surface will be affected by the brush stroke. When you are using a tablet, you can set an upper and a lower radius which can be used to help you control the radius with the pressure of the stylus.



Brush radius

Brush shape

You can also set the brush shape in Artisan. This lets you determine how the brush paints on the surface. Artisan includes eight brush shapes for your to choose from.

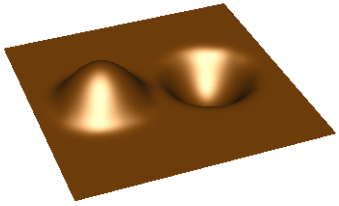
Brush shapes

Sculpt operations

When you are using Artisan to sculpt, there are four main operations that you will use.

Push and Pull

These operations let you push and pull the CVs on a surface. Most of your sculpting will start with one of these operations.

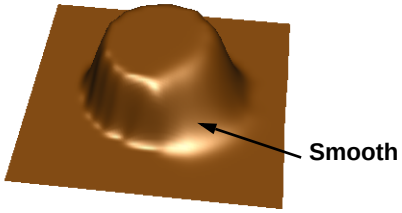


Pushing and pulling

Smooth

As you push and pull the surface, your strokes may create an uneven look to the surface. In these cases, you can use the smooth operation to soften the look of the sculpted surface.

You can also flood the surface with a smooth operation to clean up all of the strokes at the same time.



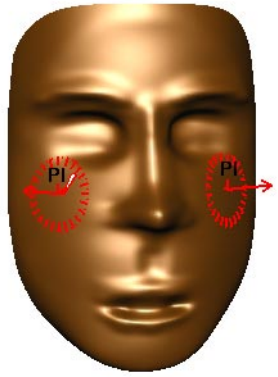
Smoothing the surface

Erase

The erase operation lets you undo your sculpting operations using a brush stroke. This lets you selectively erase brush strokes.

Reflect painting

If you are working with models that require symmetrical detailing, Artisan's *reflect paint* options can be used so that, as you paint on one side of the surface, brush strokes are automatically added to the opposite side. You can also use this method over two different surfaces.

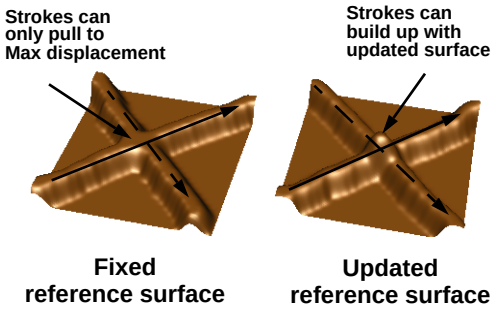


Reflect painting

The reference surface

As you sculpt with Artisan, each stroke is placed in relation to the *reference surface*. As you push and pull the surface, you cannot displace the reference surface beyond the maximum displacement value. You can update the reference surface from time to time if you want to build up brush strokes.

The reference surface can be set to automatically update after each brush stroke. This means that you can build up your brush strokes beyond the set maximum displacement.


Strokes can only pull to Max displacement
Strokes can build up with updated surface
Fixed reference surface
Updated reference surface

Reference surface

The Erase surface

When you use the Erase tool, it is possible to erase back to your starting point. This is called your *Erase surface*. If you want your Erase surface to change, then you can update it so that the new surface is the surface you erase to.

Erase surface

Installing tutorial files

For some of the *Learning Maya Artisan* lessons, you will require scene files that contain surfaces for sculpting.

These files can be found in a directory named *learningArtisan*. You can access this directory from the *Discover Maya* CD-ROM.

How to copy the learningMaya directory

- Mount the *Discover Maya* CD-ROM
- Follow the instructions on the CD for copying the *learningArtisan* directory into your Maya projects directory.

Conclusion

Now that you are familiar with the basic Artisan tools and concepts, you can start working with a real project.

Tip: Before starting these lessons, it is recommended that you complete the *Learning Maya* tutorials.

In Lesson 1, you will sculpt facial features onto a surface to create a mask. You will then animate the mask using Maya's Blend Shape functionality and a cluster that uses Artisan painted CV weights.

Note: This book also integrates soft body effects that use the **Maya F/X** package. If you do not have this Maya module, then you will not be able to complete Lesson 3 which has been labeled as **Maya F/X only**.

---

1 Sculpting a Mask

In this lesson, you will sculpt facial features onto a mask using Maya Artisan to push and pull the CVs on the surface. This lesson allows you to explore how you can use Artisan to work creatively as you sculpt, smooth and erase. You will be surprised how quickly you can sculpt several different facial poses.

The sculpted mask

Once you have sculpted the facial poses, you will use Maya tools, such as blend shape and clusters, to animate the mask. Then you will use Artisan to paint cluster weights.

In this lesson you will learn the following:

- How to sculpt surfaces by painting with Artisan
- How to use different brush operations
- How to set different brush options
- How to select CVs by painting
- How to animate the facial poses using blend shape
- How to paint graduated weight values on a cluster

Setting up Artisan

Maya Artisan is an add-on module to the base Maya package. When you first load Maya, you must set it to recognize the Artisan functionality.

1 Launch Maya

- Double-click on the Maya icon.

  Or

- Enter *maya* in a shell window.

2 Activate Maya Artisan

- Select **Options** → **General Preferences**.
- Click on the hidden tabs at the far right and choose **Packages** from the list.
- Under **Load on Startup**, set **Maya Artisan** to **On**.
- Click **Save**.

3 Relaunch Maya

Quit Maya and relaunch to make use of the new settings.

- Select **File** → **Quit**.
- Relaunch Maya.

Getting started

You will now use the *learningArtisan* project. See the introduction to find out how to copy this directory into your *maya/projects* directory.

1 Set the courseware project

To manage your files, you can set a project directory that contains sub-directories for different types of files that relate to your project.

- Go to the **File** menu and select **Project** → **Set...**

  A window opens to show you a list of the current projects.

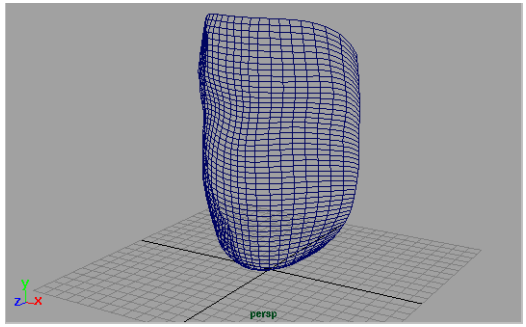
- Click on the *learningArtisan* directory.
- Click on **Set Project**.

  Now you are working with this project directory structure as you open and save your files.

2 Open an existing scene

- Select **File** → **Open Scene**.
- Click on the *mask.mb* file.
- Click on **Open**.

  A single surface appears. This is the starting point of a mask model that you will now develop in Artisan.



Mask surface

3 Increase the surface smoothness

- **Select** the surface.
- Press the **3** key to set the surface smoothness.

  This makes the surface look more dense. You have increased the display smoothness without making the surface more complex.

4 Turn on smooth shading

- Press the **5** key to turn on hardware smooth shading.

5 Change your view

- Use the **Alt** key to tumble, track and dolly in the view. You can use the following mouse combinations:

  Alt + **LMB** to tumble;

  Alt + **MMB** to track;

  Alt + **LMB** & **MMB** to dolly.

  You will be changing views frequently while using Artisan as you begin working around the object in three dimensions.

- Set up a view where the mask surface is at the left side of the view panel to make room for the Tool Settings window.

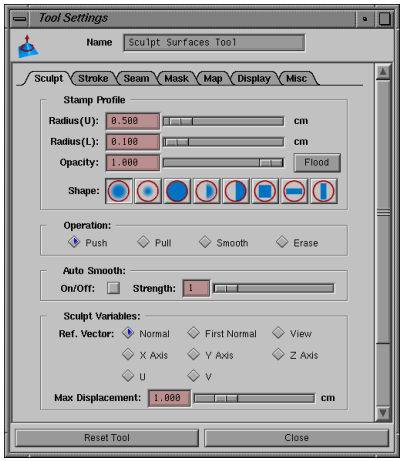
Start sculpting the surface

You will now sculpt the surface of the mask by painting on it using the Artisan Sculpt Surfaces tool. At first, you will just test the tools to get a feel for them. Later, you will erase these brush strokes so that you can paint real facial features.

1 Open the Tool Settings window

- Go to the **Modeling** menu set.
- Select **Edit Surfaces** → **Sculpt Surfaces Tool** - ❐.

  This opens the Tool Settings window which includes all of Artisan's sculpting options.



Tool Settings window

- Click on the **Reset Tool** button to make sure that you are starting with Artisan's default settings.
- Place the new window to the right of the mask model.

  You will work with this window open, until you are familiar with how to use hotkeys.

2 Paint on the surface

- Move your cursor over the mask surface. The cursor icon changes to show an arrow surrounded by a red circular outline. The arrow indicates how much the surface will be pushed or pulled while the outline indicates the brush radius.

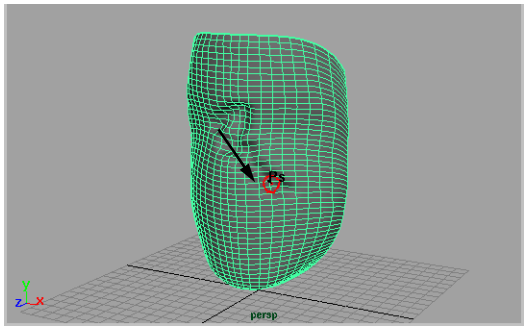
  Artisan's brush icon is context sensitive. It changes as you choose different tool settings.

- Click-drag on the surface. You are now *painting* on the surface to sculpt it.

  You can either click-drag using a mouse, or preferably, draw directly with a stylus.

Tip: Artisan works more intuitively with a tablet and stylus, since the input device mimics the use of an actual paintbrush.

This brush stroke pushes in the surface. The brush stroke is sculpting the surface.



First brush stroke

3 Change the Artisan display

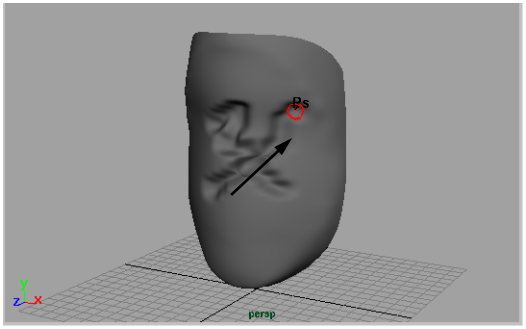
- Click the **Display** tab in the Tool Settings window.
- Click on **Show Active Lines** to turn this option off.

  Now you can focus on the surface without displaying isoparm lines.

4 Paint another stroke

- Paint a second stroke across the mask surface.

  Now it is easier to see the results of your sculpting.



Second brush stroke

Creating a new shading group

You will now create a shading group that will display more pronounced highlights to help you to see the surface as you are sculpting.

1 Create a new material node

- Go to the **Rendering** menu set.
- Select **Shading** → **Create Shading Group** → **Blinn**.

2 Assign the new shading group

- **Select** the mask surface again.
- Select **Shading** → **Assign Shading Group** → **blinn1Grp**.
- Click in open space to deselect the surface.

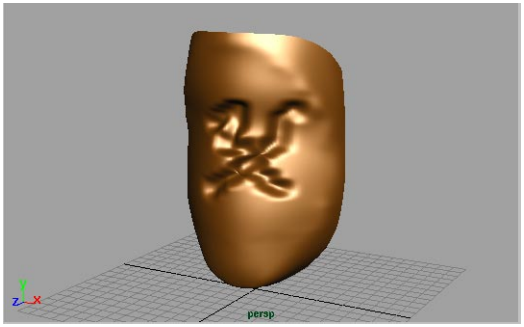
3 Edit the shading group attributes

- Select **Shading** → **Assign Shading Group** → **blinn1Grp - ❐**.
- In the Attribute Editor, open the **Common Material Attributes** and set the following attribute:

  Diffuse to **0.5**.

- Click on the swatch next to **Color** and set it to any color you like. This lesson uses an orange color.
- Under **Specular Shading**, click on the color swatch next to **Specular Color** and in the **Color Chooser**, set:

  Value to **0.8**.



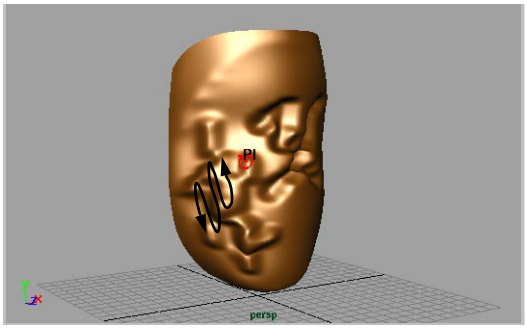
New shading group assigned

The sculpting tools

You will now explore some of the Artisan sculpting operations to see how they work. So far, you have been pushing on the surface. Now you will learn how to pull, smooth and erase.

1 Pull on the surface

- **Select** the mask surface.
- Go back to the **Modeling** menu set.
- Select **Edit Surfaces** → **Sculpt Surfaces Tool** - ❐.
- In the Tool Settings window, click on the **Sculpt** tab.
- Under **Operation**, click on **Pull**.
- Tumble around to the other side of the model.
- Paint on the surface to create a few strokes that pull out.

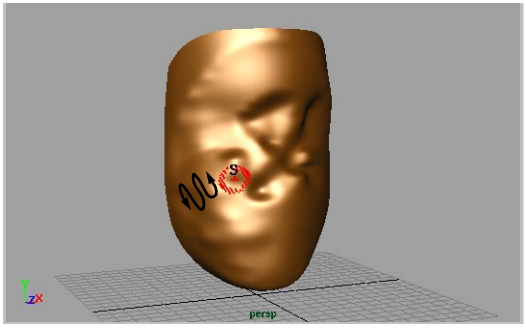


Pulling the surface with several brush strokes

2 Smooth out the results

- Under **Operation**, click on **Smooth**.
- Under **Stamp Profile**, change the **Radius (U)** to **1.0**.

  This increases the size of your brush. You can see that the red outline has increased in size. This is the brush feedback icon.
- Paint all of the strokes to smooth the details. If you stroke over an area more than once, the smoothing becomes more evident.

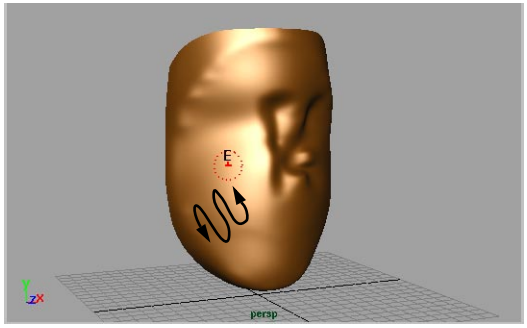


Smoothing the brush strokes

3 Erase some of the brush strokes

- Under **Operation**, click on the **Erase** option.

- Paint along the surface to begin erasing the existing sculpt edits. Don't erase all the edits.

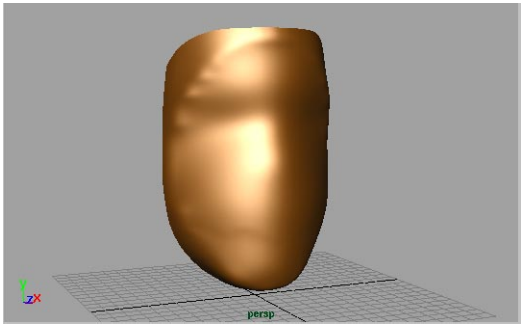


Erasing the brush strokes

4 Flood erase the surface

- In the **Stamp Profile** section, click on the **Flood** button next to **Opacity**.

  This uses the current operation and applies it to the whole surface using the current opacity setting.



Fully erased surface

Updating the reference surface

When you paint in Artisan, you paint in relation to a *reference surface*. By default, the reference surface updates after every stroke so that you can build your strokes on top of each other. You can also keep the reference surface untouched until you decide to update it manually.

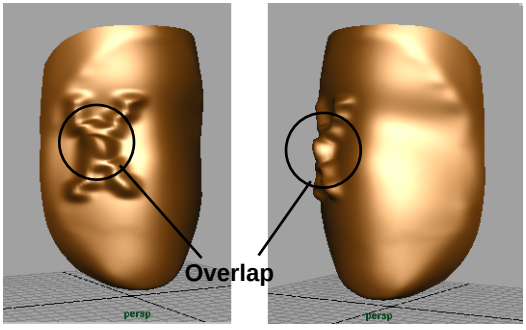
1 Change the brush operation and radius

- Under **Operation**, click on **Pull**.
- Under **Stamp Profile**, change the **Radius(U)** to **0.5**.

2 Pull the surface with two strokes

- Paint on the surface to create two crossing strokes that pull out.
- Tumble the view to see the strokes from the side.

  The second stroke built on top of the first stroke. Therefore, where the two strokes intersect, the height of the pull is higher.



Painting with reference update

3 Change the reference update

- In the Tool Settings window, scroll down to the **Surface** section, and click on the **Reference Srf: update on each Stroke** to turn this option **Off**.

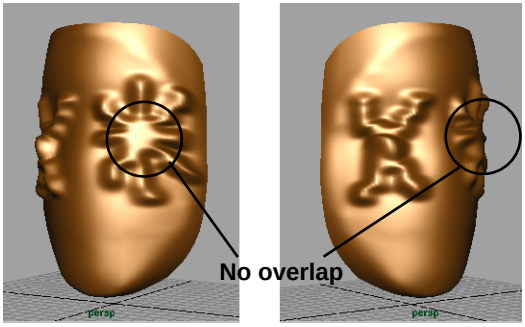
4 Paint several strokes

- Paint on the surface to create a few strokes that pull out.

- Tumble the view to see the strokes from the side.

  This time, the strokes do not overlap.

  The reference surface does not update, therefore the strokes can only displace to the **Maximum Displacement** value as defined in the Tool Settings window. You cannot displace beyond that value until you update the reference surface.



Painting with no reference update

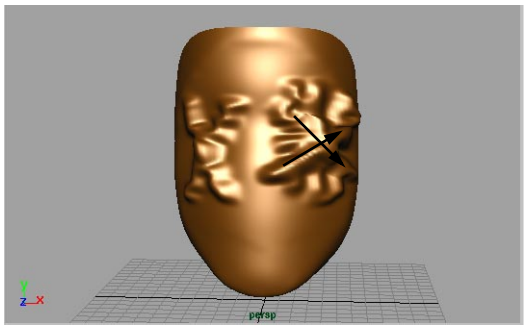
5 Update the reference layer

- In the **Surface** section, click on the **Update** button next to **Reference Srf**.

6 Paint on the surface

- Paint another two strokes over the last set of strokes.

  The overlapping strokes are again building on top of each other.



Painting on updated reference layer

7 Flood erase the surface

- Under **Operation**, click on the **Erase** option.
- Click on the **Flood** button.

Sculpting the nose

Now that your surface is clean again, you can sculpt a real face beginning with the nose. This gives you the chance to gain more control over the Artisan tools.

1 Turn reference updating back on

- In the **Surface** section, click on the **Reference Srf: update on each Stroke** to turn this option to **On**.

  This will let you build up the facial details as the reference surface updates.

2 Change your stylus pressure setting

If you are working with a tablet and a stylus, you can set up your stylus to create more subtle results.

- Click on the **Stroke** tab.
- Under **Stylus Pressure**, click on **Radius**.

This means that the harder you press, the larger the radius of the brush stroke. You can now set the upper radius (**Radius (U)**) and lower radius (**Radius (L)**) sizes that will be used by the stylus.

As you work through this lesson, explore the various stylus settings to see how they can help you paint.

3 Change your Stamp Profile settings

- Click on the **Sculpt** tab.
- Change the **Radius(U)** to **1.0**.
- Change the **Radius(L)** to **0.25**.

  This means that the lowest your stroke will go is 0.25 and the largest will be 1.0.
- Change the **Opacity** to **0.2**.

  This means that each stroke will only have 0.2 of the effect. This lets you use softer strokes to build up a shape.
- Change your stamp setting to the second icon, which has more feathering at the brush's edge.

New brush shape

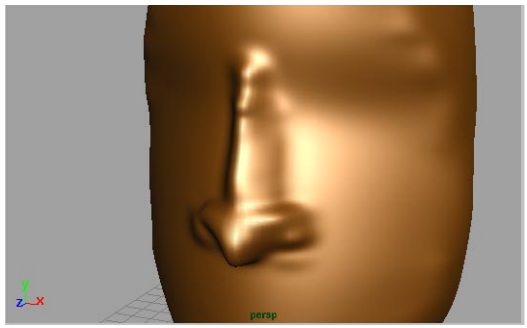
4 Paint the length of the nose

- Press the **u** key and click to bring up the Artisan marking menu.

  This marking menu is context sensitive and changes depending on which Artisan tool you are using.
- Select **Pull** from the marking menu.

  This is an alternative method for changing the tool operation without using the Tool Settings window.
- Paint from the top of the nose to the tip. Use several strokes to build up the bridge of the nose and the nostril areas. You may need to tumble your view to complete these strokes.

  If you don't like any of your strokes, you can undo the action using the **z** key, or you can **Erase** back to the original surface. Artisan gives you this flexibility in order to let you explore design alternatives.



Sculpting the nose

5 Flood smooth the shape

Since these strokes appear somewhat bumpy, you can smooth all the strokes using the Flood button.

- Press the **u** key and select **Smooth** from the Artisan marking menu.
- In the Tool Settings window, click on **Flood** twice.

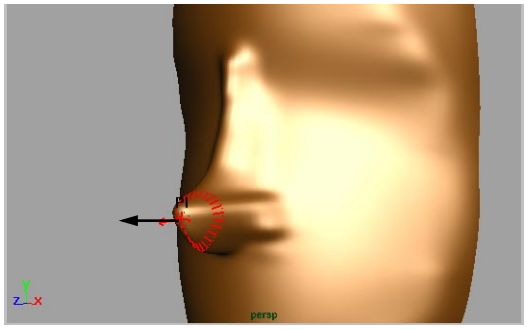
  This smooths out some of the bumps. Because the opacity setting is set to 0.2, the smoothing is more

subtle. It is a good idea to smooth your shape regularly to clean up your strokes.

6 Pull out the tip of the nose

- In the **Sculpt Variables** section, change the **Ref. Vector** to **Z-Axis**.

  This means that now you will pull out along the Z-axis instead of normal to the surface.
- Press the **u** key and select **Pull** from the Artisan marking menu.
- Paint the tip of the nose to pull it out.



Pulling the tip of the nose along the Z-axis

7 Save your work

- Select **File** → **Save Scene As...**
- Enter the name *my_mask* and **Save**.

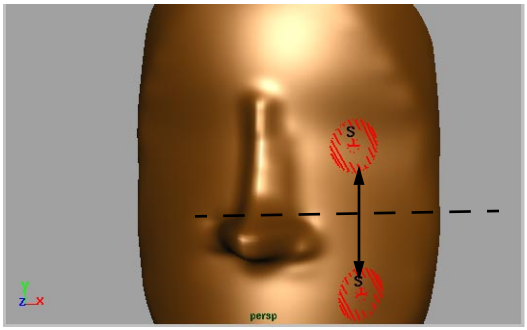
Sculpting the eyes

You now want to sculpt two eye sockets. Ideally, you want the strokes you apply to the left eye to be mirrored on the right eye. Artisan makes painting symmetrical strokes very simple.

1 Turn Reflection on

- Press the **y** key to re-select the **Sculpt Surfaces Tool**.
- Click on the **Stroke** tab.
- Under **Reflect Paint**, set **Reflection** to **On**.

  By default, it is set to reflect around the U-axis.
- Move your cursor over the surface. You can see that the reflection is going the wrong way.

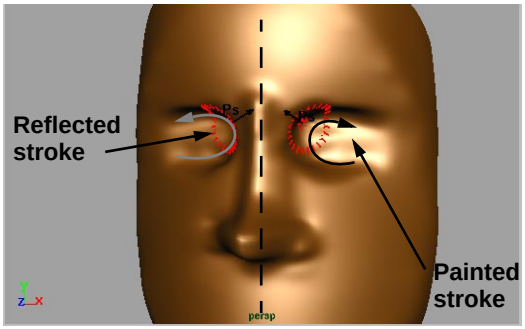


Reflecting in U

- Click on **V Isoparm** for reflecting.

2 Push the eye sockets in

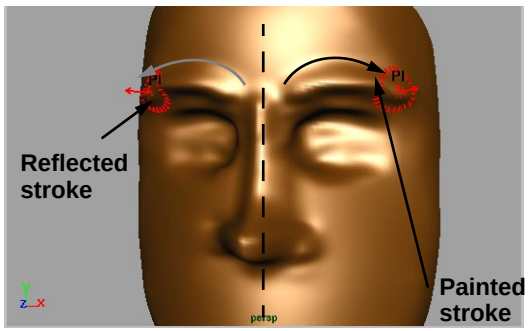
- Press the **u** key and select **Push** from the Artisan marking menu.
- Paint one of the eye socket areas to push it in. The other socket is pulled by the reflection.



Pushing in eye sockets

3 Pull the eyebrows out

- In the **Sculpt Variables** section, change the **Ref. Vector** to **Normal**.
- Press the **u** key and select **Pull** from the Artisan marking menu.
- Paint the eyebrow areas to pull them out.



Pulling out eyebrows

4 Flood smooth the surface

- Press the **u** key and select **Smooth** from the Artisan marking menu.
- Click on the **Flood** button two times.

Sculpting the mouth

You will now sculpt the mouth. You will start by pulling out the lips then pushing in the mouth.

1 Change the brush radius

- Press the **Ctrl key** and the **left arrow key** to make the radius smaller. The **right arrow key** makes the radius bigger.

Note: In the next lesson, you will learn how to set up hotkeys to change the Artisan settings more interactively.

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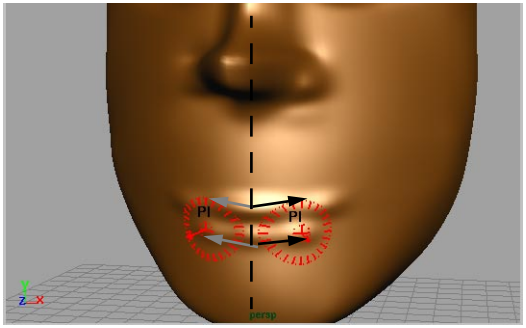
2 Pull out two lips

- Press the **u** key and select **Pull** from the Artisan marking menu.
- **Paint** the lip area to pull two lips out.

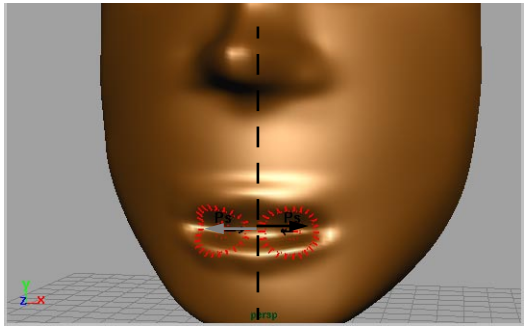


Pulling out two lips

3 Push in the mouth

- Press the **u** key and select **Push** from the Artisan marking menu.
- **Paint** between the lips to push in a mouth area.

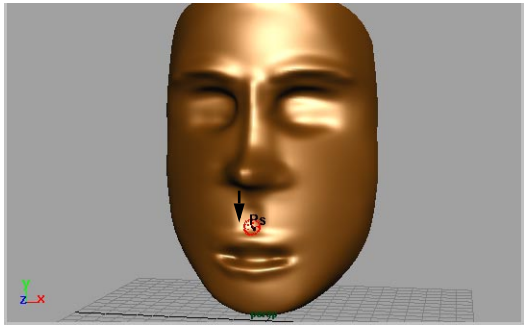
- Change to a **Smooth** operation and smooth the mouth brush strokes.



Pushing in mouth

4 Add the upper lip detail

- Press the **u** key and select **Push** from the Artisan marking menu.
- Paint the area above the upper lip to push it in.



Pushing in the upper lip

5 Save your work

Duplicate the face

You will now update the Erase surface then duplicate the face. This lets you sculpt a second face with a different facial pose. By updating the Erase surface, any brush strokes used to create the second facial pose can be erased – not to the plain mask, but rather to the more detailed pose you have already sculpted.

1 Update the Erase surface

- **Select** the mask surface.
- In the **Surface** section of the **Sculpt** tab, click on the **Update** button next to **Erase Srf**.

  Now, you can no longer erase to the original surface. You should update the Erase surface any time you are pleased with how the surface looks.

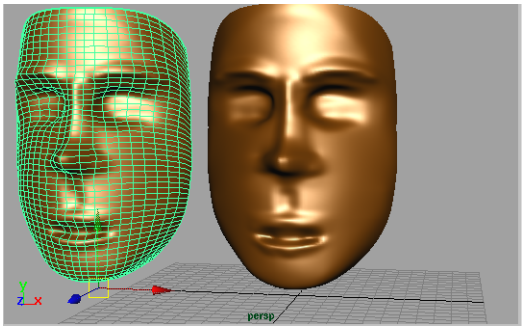
Tip: Make sure that you save a backup of the old surface in another file.

- Press the **u** key and select **Erase** from the Artisan marking menu.
- Paint the face to see if you can erase any of the strokes. You won't be able to.

  The updated Erase surface means that you cannot erase any more on this surface until you start painting again.

2 Duplicate the face and move it

- With the mask selected, select **Edit** → **Duplicate**.
- **Move** the new surface along the X-axis until it is beside the original surface.



The duplicated surface

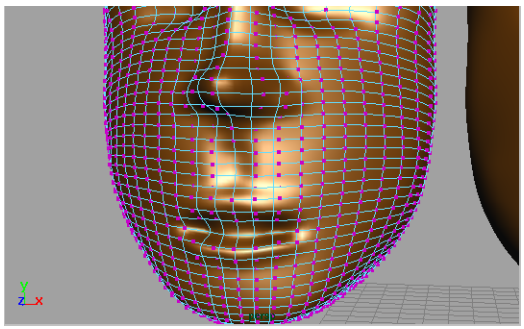
Selecting CVs

Another Maya Artisan tool is the **Paint Select CVs Tool**. This tool lets you easily select a region of CVs. You will select CVs using this tool, then use the selection to mask out the area of the face that you want to re-sculpt.

1 Select the Paint Select CVs tool

- Track and dolly closer to the mouth of the second face.
- Select **Modify** → **Paint Select CVs Tool** - ❐.

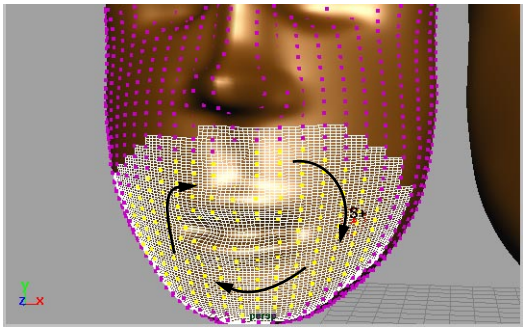
  The Component selection mode is activated and the CVs are displayed on the face.



Activated CVs

2 Select CVs on the face

- In the Tool Settings window, click on the **Select** tab.
- Make sure that your options are the default by clicking on the **Reset Tool** button found at the bottom of the window.
- Paint over the surface to select the CVs around the mouth.



Selected CVs

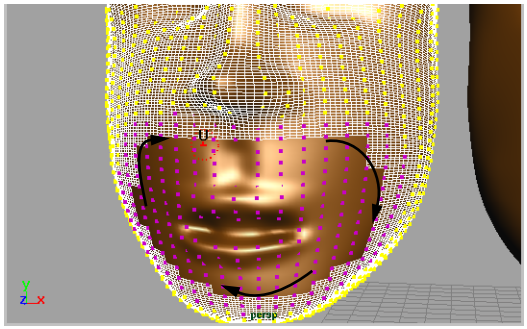
3 Reverse the selection

- In the Tool Settings window, go to the **Global Selection** section and click on the **Toggle All** button.

  Now, the unselected CVs become selected and the selected CVs become unselected.

4 Unselect some CVs

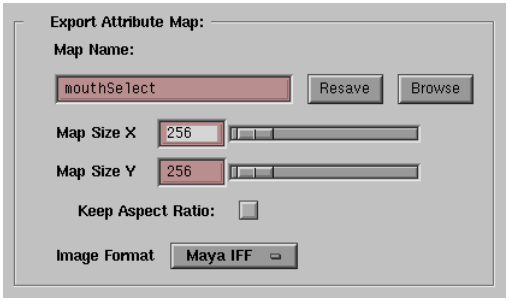
- Under **Selection Type**, click on **Unselect CVs**.
- Paint over the mouth area to unselect a slightly larger area.



Reversed selection

5 Save an image of the selection

- Click on the **Map** tab in the Tool Settings window.
- In the **Export Attribute Map** section, type *mouthSelect* and press the **Enter** key.

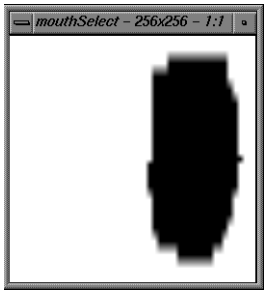


Selection map export

6 View the saved image

- Scroll up to the **Import Attribute Map** section.
- Click on the **Browse** button.
- Click on *mouthSelect* then click on the **See Image** button.

  This is what your painted region looks like as a map. You will reuse this map later in the lesson.



Saved selection map

Masking selected CVs

You can now use the selected CVs as a masked area on the face. This means that you can set up the sculpting tools to affect only unselected CVs.

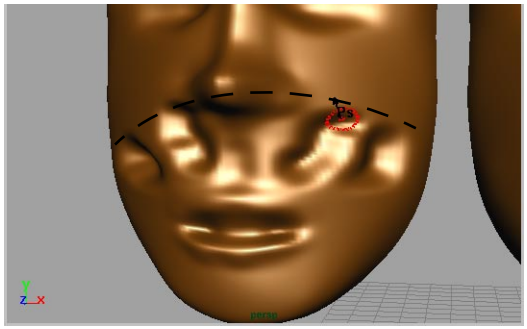
1 Sculpting around masked CVs

- Select **Edit Surfaces** → **Sculpt Surfaces Tool** - ❐.
- Press the **u** key and select the **Push** operation.
- Click on the **Mask** tab.
- Under **CV Masking**, set the following:

  Selected CVs to **On**;

  Display CVs to **Off**.

  This hides the selected CVs but uses them to mask the surface.
- **Paint** on the surface near the edge of the mask. You will see that unaffected in the areas where they are masked.



Painting near the mask

2 Flood erase the surface

- Set the **Opacity** to **1.0**.
- Choose the **Erase** operation.
- Click on the **Flood** button.

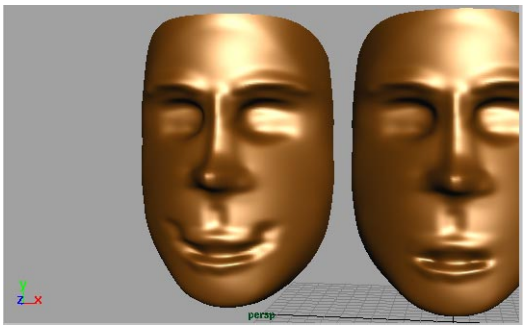
3 Paint a smiling mouth

- Set the **Opacity** to **0.2**.

Tip: Remember that it is better to use a low opacity setting to build up your work.

- Press the **u** key and select the **Push** operation.
- Click on the **Stroke** tab and turn **Reflection** to **On**. Make sure that **V Isoparm** is being used.
- Paint the corners of the mouth to create a smile.

  You may decide to change the radius, brush type or any other settings to draw the smile that you want. Remember, that you can erase if you don't like what you paint or use the **Undo** command by pressing the **z** key.



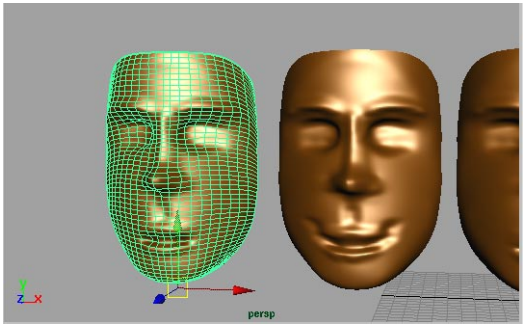
Painted smile

Sculpting another face

You will now sculpt another face so that you have a sad facial pose. To mask out the mouth area, you will load the map you saved earlier.

1 Select and duplicate the first face

- Select the **Select** tool.
- Click on the original face.
- Select **Edit** → **Duplicate**.
- **Move** the new face beside the second face.



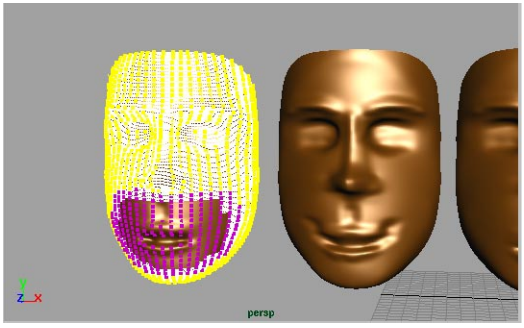
Third mask

2 Load the selection mask

- Select **Modify** → **Paint Select CVs Tool** - ❐.

- Click on the **Select** tab.
- In the **Selection Type** section, turn **Select CVs** to **On**.
- Click on the **Map** tab.
- In the **Import Attribute Map** section, click on the **Browse** button next to **Map Name**.
- Select *mouthSelect* from the list and click **Import**.

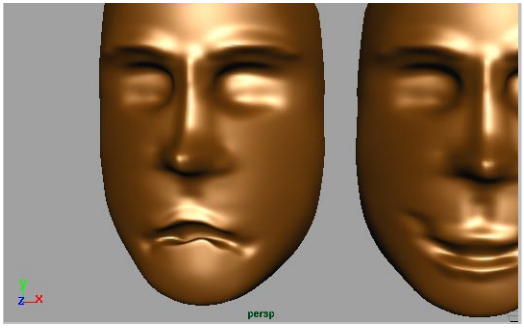
  Now, the CVs around the face are selected just like before.



Imported selection map

3 Paint another facial pose

Use the same method that you used for the smiling face to **Paint** a sad facial pose for the mouth.

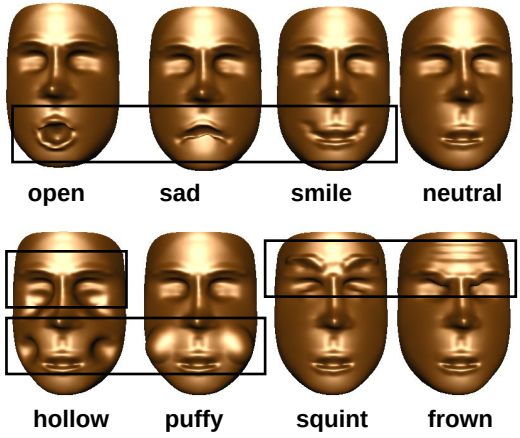


Sad mouth position

Other poses

You can now create five more faces that each have their own facial expressions, or poses. In the following diagram, you can see each of the faces. For each pose, choose either the eyes or the mouth for your edits. This works better with Blend Shape, since you can now blend different eye and mouth poses together.

When you are finished, name each surface using the names indicated on the diagram. By naming the surfaces, the Blend Shape controls will be easier to read later.



Other facial poses

ANIMATING THE FACE

You will now animate the neutral face using two different Maya deformers. The Blend Shape deformer will be used to deform the neutral face using the other seven faces as targets. The second deformer will be a cluster that you will use to bend the face forward and back.

Blend Shape between faces

You will start by blending between the various facial poses. The neutral face will be used as the base shape.

1 Apply the Blend Shape deformer

- **Select** the eight faces. Be sure to select the *neutral* face last. This can be verified by the neutral face being highlighted in green. The *neutral* face is the base shape.
- Go to the **Animation** menu set.
- Select **Deformations** → **Blend Shape**.

  The Blend Shape node is added to the *neutral* surface. You can see it in the Channel box in the Input node section.

2 Hide the target shapes

- Select all of the faces except for the base shape.
- Press **Ctrl h** to hide them.

3 Open the Blend Shape window

- Select **Window** → **Animation Editors** → **Blend Shape...**
- You can now click-drag on the various sliders to set up combined versions of the target poses.

The pose shown below uses following settings:

smile to **1.0**;

sad to **0**;

open to **1.0**;

hollow to **0**;

puff to **0**;

squint to **0.329**;

frown to **0**.

Pose at frame 1

Tip: If you want to exaggerate one of the poses, you can set the blend shape value to more than 1.0.

4 Set a key for the first pose

- Go to frame **1**.
- In the Blend Shape window, click on the **Key All** button.

5 Set poses at frame 10

- Go to frame **10**.
- Change your facial poses and again select the **Key All** button. The pose

shown below uses the following settings:

smile to **1.0**;

sad to **0**;

open to **0**;

hollow to **0**;

puff to **1.0**;

squint to **0**;

frown to **0**.

Pose at frame 10

6 Set poses at frame 20

- Go to frame **20**.
- Change your facial poses and again select the **Key All** button. The pose shown below uses the following settings:

  smile to **0**;

  sad to **0**;

  open to **0.659**;

  hollow to **0**;

  puff to **0.439**;

  squint to **0**;

  frown to **0.695**.

Pose at frame 20

7 Set poses at frame 30

- Go to frame **30**.
- Change your facial poses and again select the **Key All** button. The pose shown below uses the following settings:

  smile to **0**;

  sad to **1.0**;

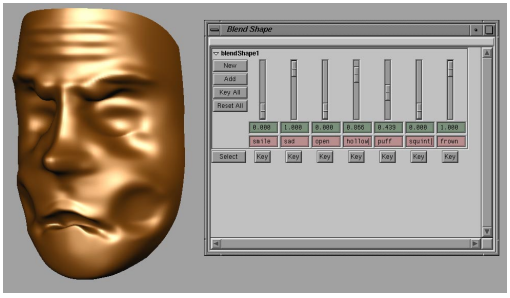
  open to **0**;

  hollow to **0.866**;

  puff to **0.439**;

  squint to **0**;

  frown to **1.0**.



Pose at frame 30

8 Playback the animation

You will now see the mask animating between the various facial poses.

Blend Shape history

When you originally set up the Blend Shape node, you hid the target shapes. Once you start blending, you can tweak any of the targets by showing and repainting it.

The construction history of the Blend Shape will then make sure that the repainted target updates on the base surface when that target is invoked.

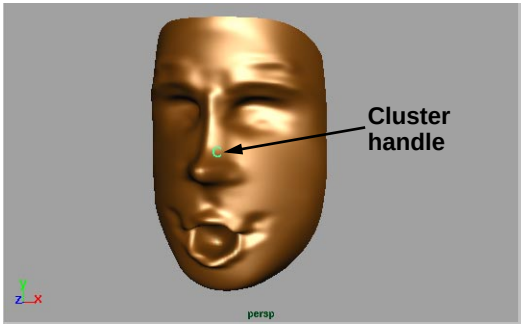
Painting cluster weights

To further animate the surface, you will add a cluster deformer onto the surface. The rotation of the cluster will be animated to add a second layer of motion onto the face.

Maya Artisan will then be used to paint cluster weights so that you can vary the effect of the cluster on the surface.

1 Create a cluster

- **Select** the *neutral* surface.
- Select **Deformations** → **Cluster**.

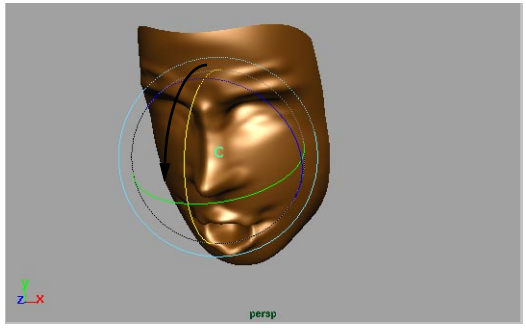


New cluster

2 Rotate the cluster

- **Rotate** the cluster forward around the X-axis.

  Because all of the cluster CVs are weighted at 1.0 by default, the whole surface rotates.



Rotated cluster

3 Open the paint weights tool

- **Select** the *neutral* surface.
- Select **Deformations** → **Paint Weights Tool -** ❐.
- Click on the **Display** tab.
- In the **Values** section, make sure that **Color Feedback** is **On** and then click on the **Use Set Color** to turn it **On**.

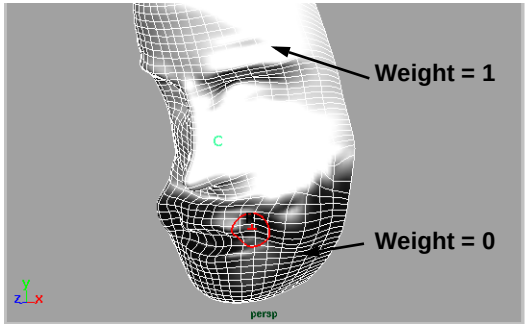
  This means that the cluster weights will be displayed on the surface as a color value. By default, the surface is white (value of 1.0). You will now paint other cluster values onto the surface.

4 Paint a weight of 0 on the cluster

- Click on the **Weight** tab.
- In the **Stamp Profile** section, set the **Value** to **0.00**.

- In the **Operation** section, make sure **Replace** is set to **On**.
- Paint on the bottom of the face to set the value.
- You will have to tumble around to get all of the CVs on this part of the surface.

  As you paint them, they will pop back to an unrotated position. They will also turn black, which represents a weight of 0.

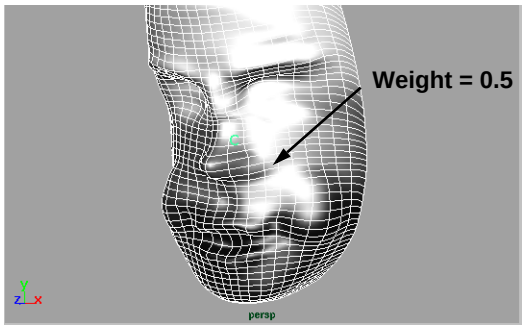


Cluster weights at 0 and 1

5 Paint other weights on the cluster

- Change the weight to **0.5**.
- Paint the middle of the face.
- Change the operation to **Smooth**.
- Click **Flood** twice.

  This creates a nice blend of the weights from the top of the mask down to the base.



Painted cluster weights

Animate the cluster

To animate the cluster, you will set keys on its rotation at four key frames. Two key frames will be set for the start position of the cluster while the other two will be set for rotations to the left and right. The soft blend of the cluster weights will let the top of the face animate faster than the bottom.

1 Key the cluster rotation at frame 1

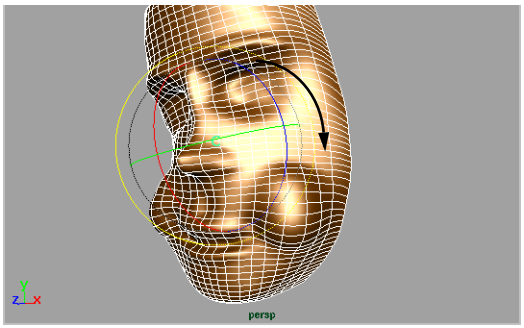
- Go to frame **1**.
- **Select** the cluster using the cluster handle.
- Press **Shift e** to set keys on the rotation channels.

2 Key the cluster rotation at frame 30

- Go to frame **30**.
- Press **Shift e** to set keys on the rotation channels.

3 Key the cluster rotation at frame 10

- Go to frame **10**.
- **Rotate** the cluster to the left and back.
- Press **Shift e** to set keys on the rotation channels.

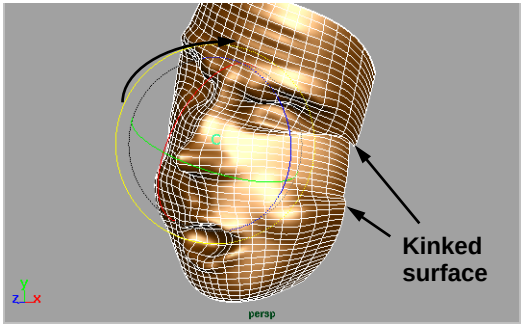


Rotated cluster at frame 10

4 Key the cluster rotation at frame 20

- Go to frame **20**.
- **Rotate** the cluster to the right.
- Press **Shift e** to set keys on the rotation channels.

  You may notice some kinking at the side of the mask. You can use Artisan to fix this by smoothing the weights at these points as shown below.

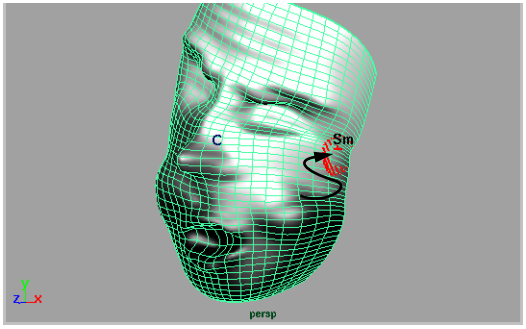


Rotated cluster at frame 20

5 Use Artisan to smooth the weights

- **Select** the *neutral* surface.
- Select **Deformations** → **Paint Weights Tool -** ❐.
- Press the **u** key and select **Smooth** from the marking menu.
- **Paint** the kinked area of the surface to smooth the deformation.

  Scroll through the animation to see if other frames show this kind of kinking. You can then smooth the cluster weights there, too.



Corrected weights

6 Playblast the results

- Select **Window** → **Playblast...** to preview the animation.

Playblast of animation

7 Save your work

Conclusion

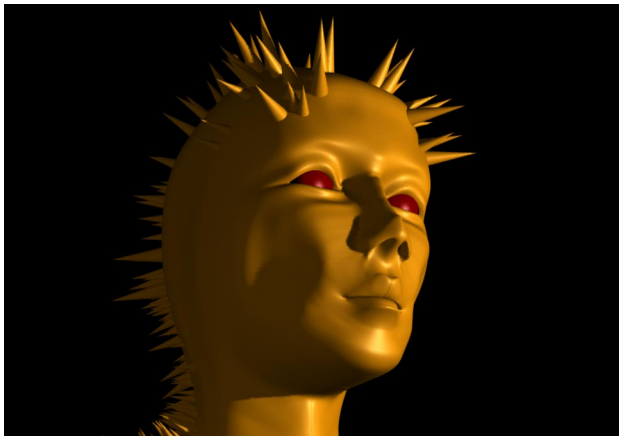
If you like, you can now set up a set and some textures just like the cover image of this lesson. Use your knowledge of creating and applying shading groups to complete the scene.

You can now see how Maya Artisan can be used to accomplish many tasks in Maya mor easily than standard methods. You can push and pull CVs, select CVs and paint cluster weights as you model and animate your models. It is important to note how Artisan can be used to help you set up models for animation.

In the next lesson, you will explore the use of Artisan on a more complex head model.

2 Detailing a Head

In this lesson, you will take an existing model of a head and add detail using several Maya Artisan tools. You will start by sculpting the cheek and jaw areas. Because the head is built out of two half surfaces, you will need to *reflect paint* across the two surfaces and paint across the seam that separates the two halves of the surface.



The sculpted head

Once you have the details painted, you will use the Script Paint tool to paint spiked cones directly onto the head surface. You will then use a special script called the *geometry paint script* to complete the painting of the cones.

In this lesson you will learn the following:

- How to sculpt multiple surfaces
- How to sculpt across a seam
- How to use the Script Paint tool
- How to use the geometry paint script

Initial set-up

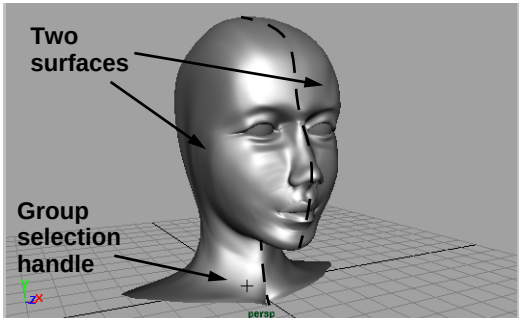
You are going to complete this lesson using a model of a head that has already been created using Maya's surfacing tools. In general, Artisan is best suited for refining models at the later stages of the modeling process rather than building complex models from scratch.

To start this lesson it is *very important* that you place the *geometryPaint.mel* script into your *maya/scripts* directory. See your Maya Artisan installation instructions for details.

1 Open an existing scene

- Select **File** → **Open Scene**.
- Click on the *head.mb* file.
- Click on **Open**.

  A model of a woman's head appears. This model includes two surfaces which define the right and left sides of the head, as well as two spheres which represent the eyeballs. All these pieces are grouped together. To select the whole group, you can use the selection handle at the base of the neck.



Head surfaces

Defining Artisan hotkeys

By setting up hotkeys, you will have faster access to Artisan tool settings. It is a good idea to set up hotkeys for the upper brush radius, the maximum displacement and the opacity.

1 Open the Hotkeys editor

- Select **Options** → **Customize UI** → **Hotkeys...**
- Scroll down to the **Maya Artisan Tools** section of the **Hotkeys** window.

2 Define an upper brush radius hotkey

- Click on **Activate Modify Upper Brush Radius (Press)**.
- In the **Key Settings** section, set the following:

  Key to **b**;

  Action to **Press**.
- Click the **Apply New Settings** button.

Note: If the **b** key is already defined as a hotkey, then you can either replace it with the Brush Radius or you can choose another key.

- Click on **Activate Modify Upper Brush Radius (Press)**.
- In the **Key Settings** section, set the following:

  Key to **b**;

  Action to **Release**.
- Click the **Apply New Settings** button.

Later, when you are working with the Artisan tools, you can see how this hotkey works.

3 Define other hotkeys for Artisan

- Use the technique outlined above to set the **n** key for the activation and deactivation of **Maximum Displacement** modification.
- Use the techniques outlined in step 2 to use the **m** key for the activation and deactivation of **Opacity** modification.
- If desired, map other Artisan attributes to hotkeys.
- Click **Save** then **Close**.

  These settings are now available when you start working on the head surfaces.

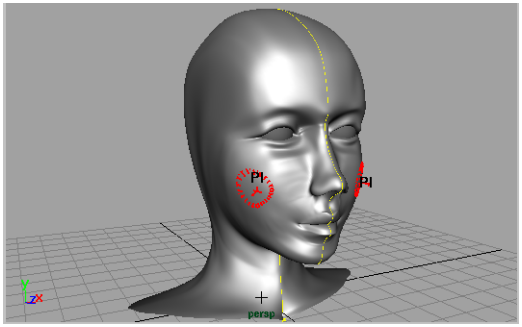
Sculpting facial details

To start, you will paint some facial details onto the two surfaces. In the last lesson, you were able to reflect paint on the same surface. You will use a similar technique to reflect paint across two surfaces.

1 Paint on both the surfaces

- Go to the **Modeling** menu set.
- **Select** both of the head surfaces.
- Select **Edit Surfaces** → **Sculpt Surfaces Tool** - ❐.
- Click on the **Display** tab and set **Show Active Lines** to **Off**.
- Click on the **Stroke** tab and, under **Reflect Paint,** set **Reflection** and **Multiple Surf** to **On**.

Now you can paint on both sides of the head even though it is built out of two separate surfaces.

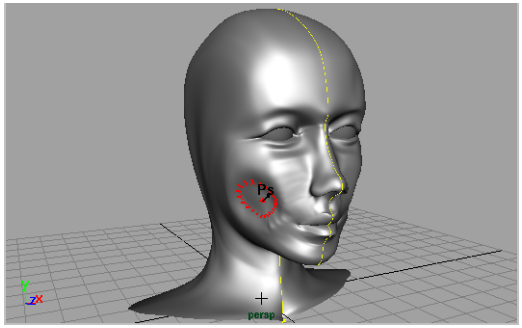


Reflecting over two surfaces

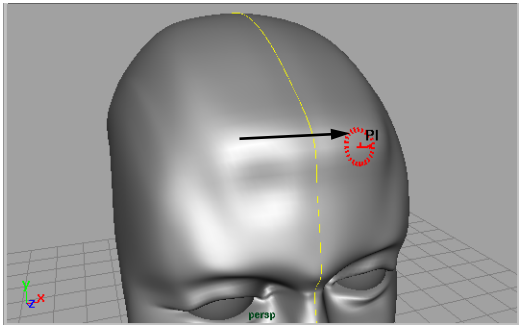
2 Push in the cheeks

- Press the **u** key and make sure that your operation is set to **Push**.
- Press the **b** key and click-drag to set the **Radius (U)** to **0.3**.

  As you click-drag, you will notice the value changing. Release the mouse button when you reach the desired value.
- Press the **n** key and click-drag to set the **Max Displacement** to **0.35**.
- Press the **m** key and click-drag to set the **Opacity** to **0.2**.
- Click-drag on the cheeks to push in this area of the face.



Sculpted cheeks



Pulling across two surfaces

Sculpting across surfaces

You will now add detail to the forehead and the nose where you need to sculpt across the two surfaces. This means sculpting across the seam that separates the two common edges.

1 Sculpt the forehead area

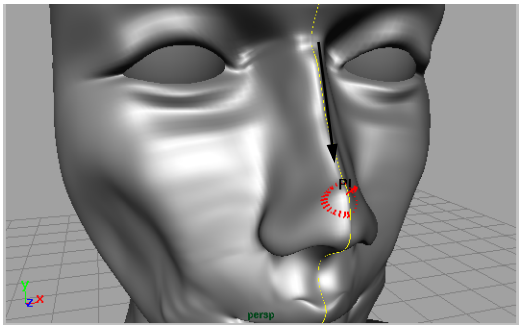
- In the Tool Settings window, click on the **Stroke** tab and set **Reflection** to **Off**.
- Press the **u** key and make sure that your operation is set to **Pull**.
- Paint across both surfaces along the forehead area.

  The seam between the surfaces is maintained by Artisan throughout the brush stroke. This can be controlled by the Seam Auto-creations settings. You can read more about working with seams in the *Using Maya Artisan* book.

2 Sculpt the nose area

- Dolly into the nose area.
- Use your hotkeys to set a small brush radius.
- Paint the bridge of the nose to pull it out.

  Again the seam is maintained. At first, the stroke pulls the surfaces apart, but the seam pulls the surfaces back together.



Sculpted nose

Painting geometry

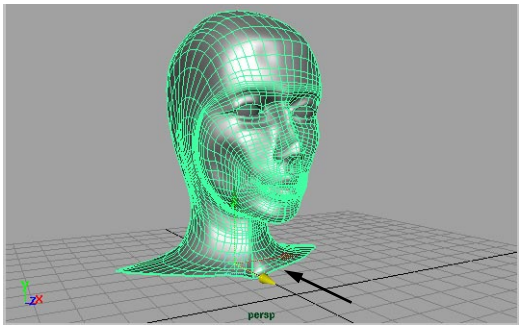
Another important tool in Artisan is the Script Paint tool that lets you use a MEL (Maya Embedded Language) script to add functionality to Artisan. You will paint a

spiked hairstyle of primitive cones onto the head using the reflect option.

1 Move the head back

You will move the head back to give yourself room to build the cone.

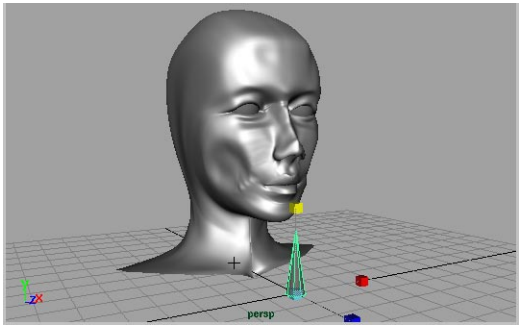
- Dolly out to see all of the head.
- **Select** the head group using the selection handle at the base of the neck. This selects all of the pieces of the head.
- **Move** the head back along the Z-axis.



Moved surface

2 Build a primitive cone

- Select **Primitives** → **Create NURBS** → **Cone**.
- **Scale** the cone around the origin to make it smaller, and then **Scale** it along the Y-axis to make it taller.



New primitive cone

- Select **Edit** → **Delete by Type** → **History**.

  You deleted history because, when you later paint multiple copies of the cone onto the head, you do not want to also make copies of the history nodes.
- Select **Modify** → **Freeze Transformations**.

  This function lets you keep the current shape of the cone while returning its transform values back to default values.

3 Rename and hide the cone

- In the Channel box, rename the cone to *spike*.
- Select **Display** → **Hide** → **Hide Selection**.

  The geometry does not have to be visible for you to use the geometry painting.

4 Load the build rotation node plug-in

To use the geometry paint script's *align* option, you need the *buildRotationNode* plug-in. The script uses this node type to

create and maintain the alignment of the geometry to the surface.

- Select **Window** → **General Editors** → **Plug-in Manager...**
- Click on the **loaded** button next to **buildRotationNode.so**.

  If you want to use this function on a regular basis, click on the **auto load** button.
- Close this window.

5 Set up the Script Paint tool

You will now load the geometry paint script into the Script Paint tool so that you can use the added functionality.

- **Select** the two main surfaces of the head.
- Select **Modify** → **Script Paint Tool** - ❐.
- Click on the end of the tabs and choose the **Setup** tab.
- In the **Tool Setup Cmd:** field, type the following:

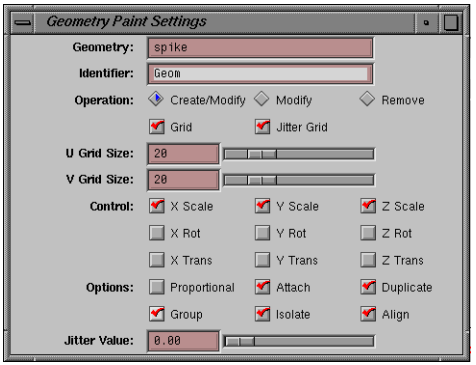
  geometryPaint
- Press the **Tab** key to accept this entry.

  This opens up the **Geometry Paint Settings** window that includes options offered by the script.

6 Load the cone geometry

The first thing that you need to do is to tell the script which piece of geometry you want to paint with.

- In the **Geometry Paint Settings** window, type *spike* in the **Geometry:** field. Press **Enter**.
- In the **Options** section, turn **Align** to **On**.



Geometry Paint Settings window

- Minimize this window so that you can change the settings later.

7 Set up the paint options

- In the Tool Settings window, click on the **Display** tab and under **Surface**, turn **Show Active Lines** to **Off**.
- Return to the **Script Paint** tab and in the **Stamp Profile** section, set the following:

  Radius (U) to **0.75**;

  Opacity to **1.0**;

  Value to **0.6**.
- Make sure that the **Operation** is set to **Replace**.

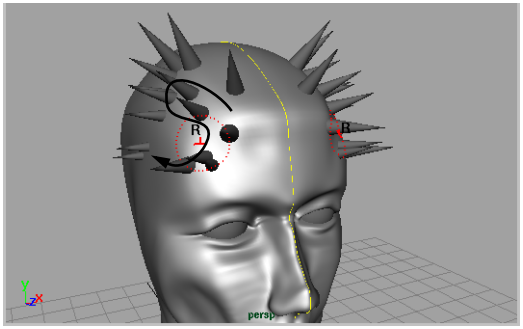
8 Set up the reflect options

- Click on the **Stroke** tab.
- Under **Reflect Paint** turn **Reflection** and **Multiple Surf** to **On**.

9 Paint the geometry onto the surface

- Paint around the skull area of the head.

  The spikes are placed randomly over the surface using different scale sizes. The reflect option also adds the spikes to the other side of the head.



Painted geometry

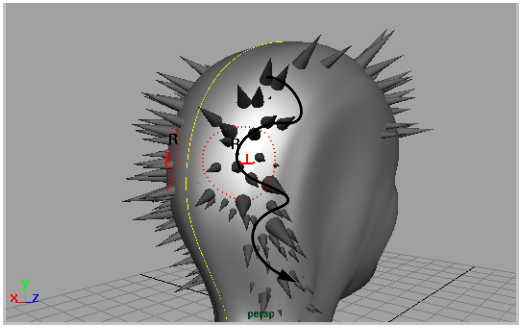
Tip: To optimize performance when tumbling views, set the display smoothness of the head to **1**.

10 Paint more cones onto the back

- Maximize the Geometry Paint Settings window.
- Change the following settings:

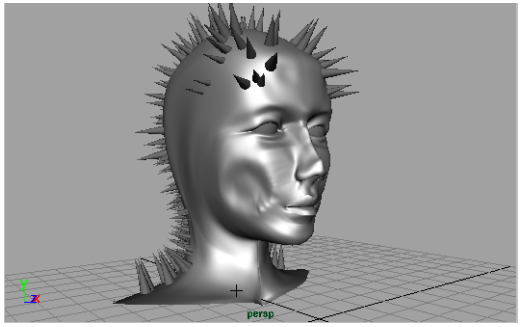
  U Grid Size to **50**;

  V Grid Size to **50**.
- Paint the back of the skull with the spike cones.



Increased grid for painting

- You can now add more geometry to the head using the geometry paint script to create a 'punk' look for the character.



Completed head

Conclusion

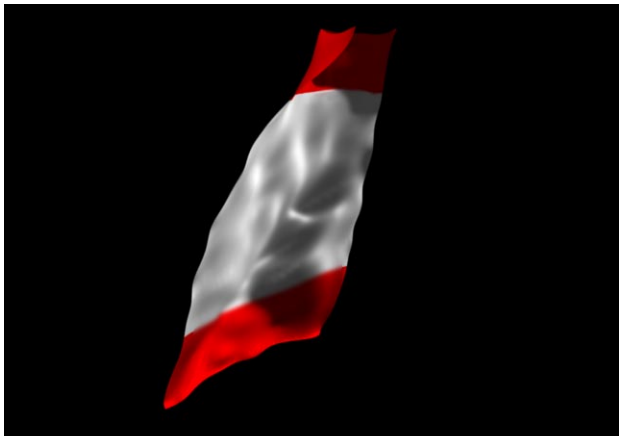
In Maya Artisan, you can sculpt on multiple surfaces. Using *common edge detection*, you are able to paint over the seams separating the surfaces so that they appear as if there is no break.

The Script Paint tool offers another level of functionality in Maya Artisan where a MEL script can be used to offer new uses for the Artisan brush stamps.

In the next lesson, you will explore another MEL script that lets you paint goal weights on a dynamic soft body object.

3 Animating a Cape

In this lesson, you will create an animated cape using a simple surface that you convert into a soft body object. This lesson uses Maya Artisan to help you control the soft body surface by painting goal weights. The script used in this lesson is an example of the added functionality that you can load into Artisan using the Script Paint tool.



The animated cape

After completing this lesson, people who are comfortable with writing MEL scripts can take a look at the script used in this lesson to see how it was written.

In this lesson you will learn the following:

- How to set up a surface for sculpting
- How to sculpt a surface using an imported file texture
- How to set up a soft body simulation
- How to use a MEL script to paint goal weights

Important Note: This lesson requires the Maya F/X module.

Initial set-up

To start this lesson it is *very important* that you place the *softBodyPaint.mel* script into your *maya/scripts* directory. See your Maya Artisan installation instructions for details.

1 Create a new file

- Select **File** → **New Scene**.

  You will be building and animating the cape from scratch.

Creating the cape

To start this lesson, you will build a primitive plane that you will reshape into a cape. You will then make the surface's topology more complex to give Artisan the detail it needs.

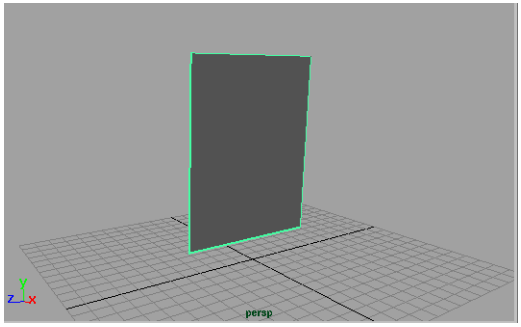
1 Create a primitive plane

- Go to the **Modeling** menu set.
- Select **Primitives** → **Create NURBS** → **Plane**.
- Select **Edit** → **Delete by Type** → **History**.

  You do not need construction history since you will be pulling CVs. When you pull CVs, the ability to edit the number of spans in the plane's input node is broken.
- Press the **5** key to turn on hardware shading.
- Press the **3** key to increase the surface smoothness.

2 Place the primitive plane

- **Scale** the plane to a size of **12** along the X-axis and **9** along the Z-axis.
- **Rotate** the plane **90** degrees around the Z-axis.
- **Move** the plane about **8** units above the ground grid.

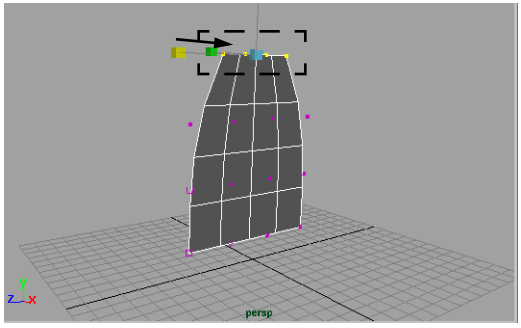


Cape surface

3 Scale the top of the cape

To taper the cape surface, you will scale the top row of CVs.

- Press the **F8** key to go into component mode.
- **Select** the top four CVs on the surface.
- **Scale** them down to taper the top of the cape.

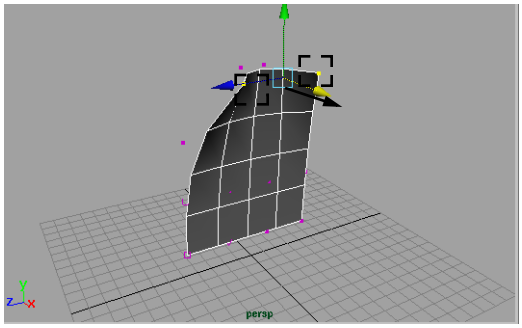


Scaled CVs

4 Create the neck of the cape

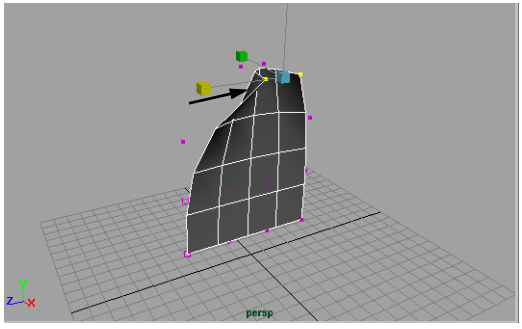
To create the collar of the cape, you will pull the two outer CVs forward then scale them in.

- **Select** the two outer CVs at the top of the cape.
- **Move** them forward along the X-axis.



Moved CVs

- **Scale** them in along the Z-axis.



Scaled CVs

5 Rebuild the surface complexity

To add more CVs to the surface so that Artisan can sculpt more easily, you will need to rebuild the surface so that it has more spans along the U and V directions.

- Press **F8** to return to object selection mode.
- Select **Edit Surfaces** → **Rebuild Surfaces** - ❒.
- In the option window, set the following:

  Number of Spans U to **20**;

  Number of Spans V to **10**.
- Click **Rebuild** then **Close**.

Sculpt the cape

You will now use Maya Artisan to sculpt some detail into the cape. To give it a random look, you should apply a fractal map to one of the sculpting operations.

1 Create a fractal map

You will start by creating a procedural 2D texture.

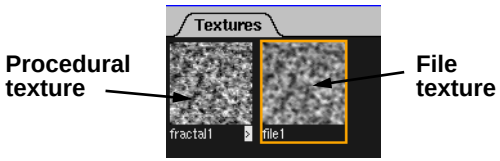
- Select **Window** → **Multilister...**
- In the Multilister, select **Edit** → **Create...**
- Click on the **Textures** tab then click on the **Fractal** button under **2D Textures**.

2 Convert the map into an image

Since Artisan needs a file texture to map a sculpting operation, you will convert the procedural texture.

- In the Textures section of the Multilister, click on the *fractal1* map.
- In the view panel, **Select** the cape surface.
- In the Multilister, select **Edit** → **Convert Solid Texture.**

  This creates a file texture in the Multilister that works with the cape surface. The actual texture is saved in the *sourceimages* directory.



Two texture nodes

3 Load the image into sculpting tool

The new file texture can be loaded into Artisan's sculpting tool. When you load a map, the active operation is then applied using the map as if it was a complex brush stroke that was covering the whole surface.

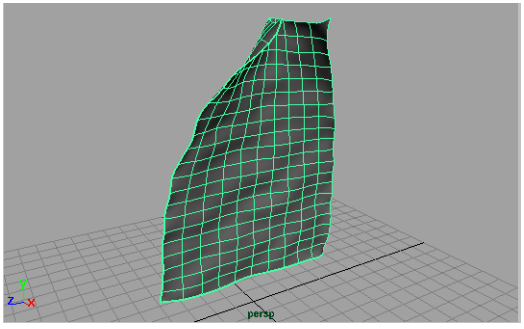
- Select **Edit Surfaces** → **Sculpt Surfaces Tool** - ❐.
- Set the following options:

  Operation to **Pull**;

  Opacity to **1.0**;

  Max Displacement to **0.5**.
- Click on the **Map** tab.
- Click on the **Browse** button next to **Map name**.
- Select the saved fractal map from the *sourceimages* directory.

  Artisan uses this map to **Pull** the surface using the chosen settings.



Sculpted surface

4 Save your work

- Select **File** → **Save Scene As...** and save your file as *cape_01*.

Apply soft body dynamics

To animate the cape, you will use *soft body dynamics*. This will let you turn the cape into a special surface that deforms based on the various dynamic forces that are applied to it. You will also use a hidden version of the original surface as a *goal* for the soft body. This ensures that the soft body tries to return to its original shape as it is being blown around.

1 Create a soft body

- **Select** the cape.
- Go to the **Dynamics** menu set.
- Select **Bodies** → **Create Soft Body** - ❐ and set the following options:

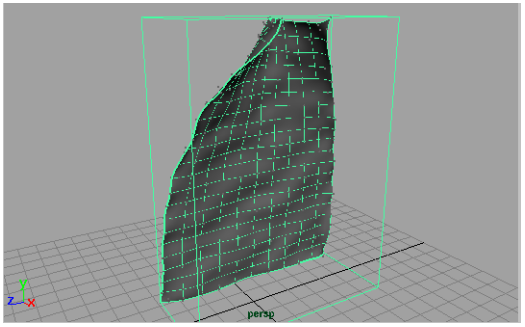
  Convert to **On**;

  Duplicate to **On**;

  Hide Original Object to **On**;

  Enable Goal Weight to **On**;

  Weight to **0.5**.
- Click **Create** then **Close**.



Surface converted into a soft body

2 Add a gravity field

By adding gravity, the cape will drop towards the ground as it blows around.

- Select **Fields** → **Create Gravity**.

  Because the soft body was selected, you connected this field as it was created.

3 Add turbulence

You will now add a turbulence field to randomize the motion off the cape.

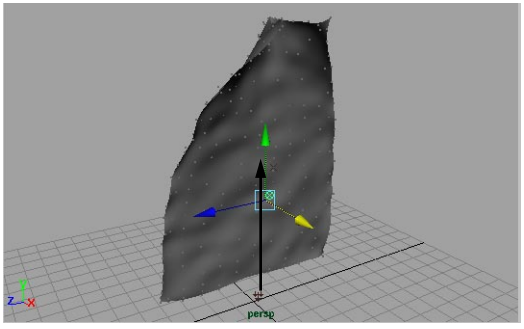
- Open up an Outliner panel and **Select** only the *softObject*.
- Select **Fields** → **Create Turbulence**.

  Again, the field is connected to the soft body as it is created.
- In the Channel box, change the following turbulence attributes:

  Magnitude to **25**;

  Max Distance to **5**;

  Use Max Distance to **On**.
- **Move** the turbulence icon up into the center of the cape area.



Moved turbulence field

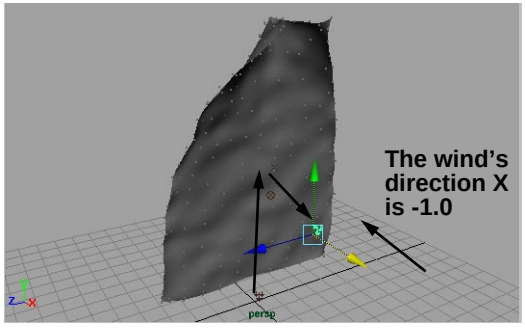
4 Add wind

You will now add a wind force to blow the cape backwards.

- **Select** the *softObject*.
- Select **Fields** → **Create Air - ❐.**
- Click on the **Wind** button then set the following attributes:

  Magnitude to **20**;

  Direction X to **-1**.
- Click on **Create** then **Close**.
- **Move** the air field icon up in front of the cape.



Moved air field

5 Add springs

To help the soft body spring back as it is affected by the dynamic forces, you will add springs.

- Select the *softObject*.
- Select **Bodies** → **Create Springs - ❐.**
- Under **Spring Methods**, set the following:

  Set Min/Max to **On**;

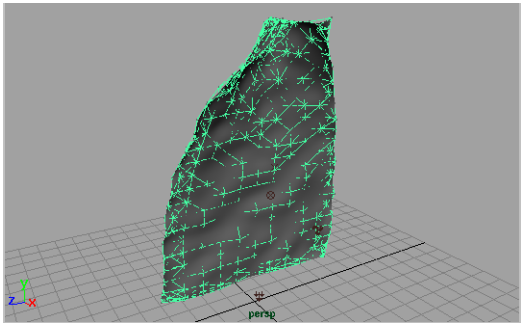
  Max Distance to **1**.

  Under **Spring Attributes**, set:

  Stiffness to **20**.

- Click on **Create** then **Close**.

  This creates a mesh that strings together the particles on the soft body. You can hide the springs since they do not need to be visible to be part of the simulation.



Springs

- Select **Display** → **Hide** → **Hide Selection**.

  By hiding the springs, you will speed up the simulation.

6 Playback the simulation

To see the effect of all these forces, you can playback the scene to view the simulation.

- Set your playback range from **1** to **200** frames.
- Playback the simulation.

  Not much is happening. The particles only move a little as they hang off of their original goal. A constant goal weight of 0.5 is too limiting for this simulation.

Paint the goal weights

To increase the action in the simulation, you need to vary the goal weights across the soft body. You could pick the soft body particles one at a time and apply the weights that way. Maya Artisan's Script Paint tool lets you use a more intuitive method.

1 Set up the Script Paint tool

- Go to frame **1**.
- **Select** the *softObject*.
- Select **Modify** → **Script Paint Tool** - ❐.
- Click on the **Setup** tab and in the **Tool Setup Cmd:** field enter:

  softBodyPaint goalPP

- Press the **Tab** key to accept this entry.
- Click on the **Display** tab and under **Surface**, turn **Show Active Lines** to **Off**.
- Return to the **Script Paint** tab and, under **Stamp Profile**, set the following:

  Value to **1.0**.

- Click on the **Flood** button.

  Now the whole surface uses a goal weight of 1.0. This gives you a good starting point.

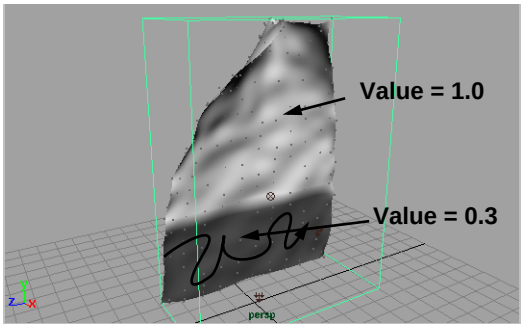
2 Paint the cape with goal weights

- Under **Stamp Profile**, set the following:

  Value to **0.3**.

- **Paint** the bottom of the cape.

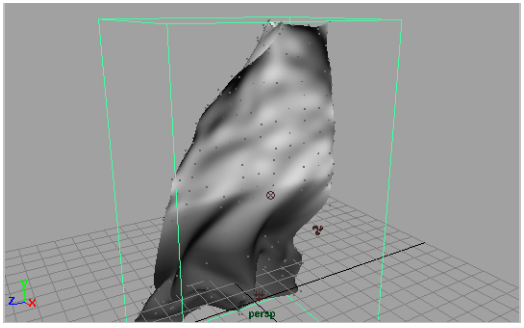
  This script lets you visualize the painting of the value by actually painting a grayscale value onto the surface.



Painted weights

- Playback the simulation.

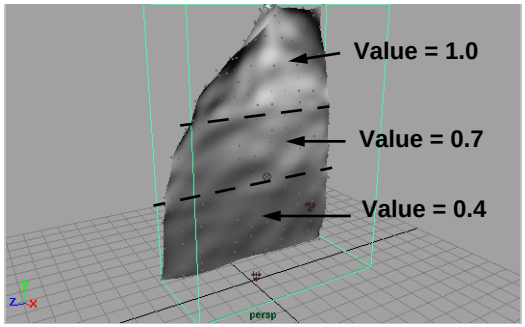
  Now the cape is beginning to flow with the various forces being applied to it. It looks like **0.3** is a little too loose.



Animated soft body surface

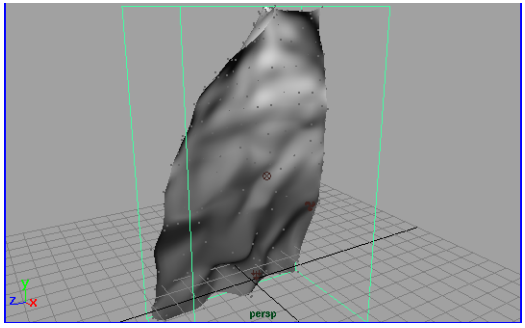
3 Repaint the cape

- Go to frame **1**.
- Change the Stamp Profile **Value** to **0.4**.
- **Repaint** the bottom of the cape using this value.
- Change the Stamp Profile **Value** to **0.7**.
- **Paint** the middle area of the cape.



Painted CV weights

- Playback the simulation.

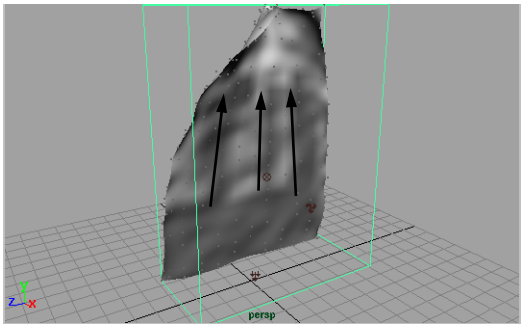


Animated soft body surface

4 Add folds to the cape

You can add some complexity to the simulation by varying the weights along the length of the cape.

- Go to frame **1**.
- Change the Stamp Profile **Value** back to **0.4**.
- Make your **Radius (U)** – the upper brush radius – smaller.
- **Paint** three strokes down the length of the cape.



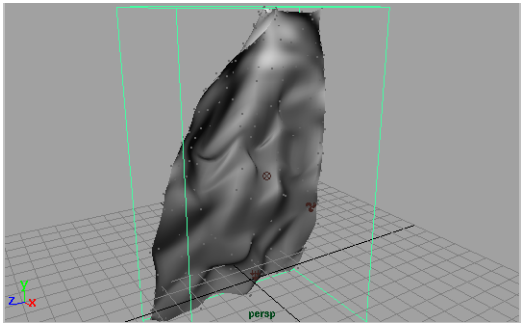
Painted CV weights

5 Smooth the stripes

To soften the effect of these new brush strokes, you will smooth them out with the Flood button.

- Change the stamp **Opacity** to **0.2**.
- Change the **Operation** to **Smooth**.
- Click the **Flood** button twice.
- Playback the simulation.

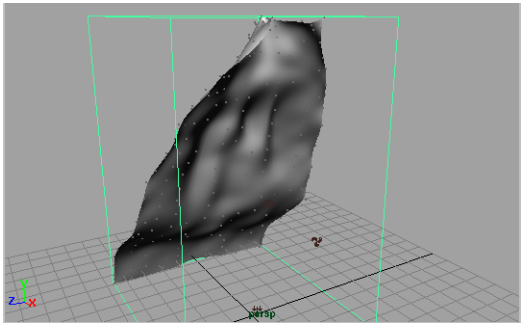
  Now you can see the creases forming where the new brush strokes were applied.



Animated soft body

Finishing touches

You can now continue to paint the surface to get the animated look that you want. At the same time, you may want to play with other parts of the simulation such as the speed of the wind or the magnitude of the turbulence. Set these along with the soft body goal weights to get the cape to animate the way you want it to.



Animated soft body

Conclusion

You have now seen how you can use Artisan's Script Paint tool to add new functionality to the Maya environment. Artisan has replaced a more time-consuming task with the faster and more intuitive paint paradigm.

Be sure to refer to the *Using Maya Artisan* guide to learn about other scripts that can be used to extend the Artisan functionality. If you enjoy creating MEL scripts, then you can take a look at the script used in this lesson and explore how you can create your own Artisan tools.

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